

Big Sky Pathways101



What are they?

Why are we implementing them?

Who will develop the Pathways?

What is in it for the Student????????

Where did they come from?



- Proposed by the US Department of Education
- Developed and then adopted by the National Association of State Directors of Career Technical Education.

Sixteen Career Clusters

- Agriculture, Food & Natural Resources
- Finance
- Architecture & Construction
- Education & Training
- Arts, AV Tech & Communications
- Government & Public Administration
- Business, Management & Administration
- Health Science
- Hospitality & Tourism
- Manufacturing
- Human Services
- Marketing Sales & Service
- Information Technology
- Sciences, Tech, Engineering & Mathematics
- Law, Public Safety, Corrections & Security
- Transportation, Distribution & Logistics



DEFINITIONS



- A career **field**

Means the overall description of one of the six areas of employment opportunities.

Business, Management & Information Systems

DEFINITIONS



- A career **cluster**

is a list of occupations that fall under the particular career field heading.

Montana's clusters are:

Marketing & Sales

Management & Administrative Services

Hospitality and Tourism

Finance

Information Technology



Montana Office of Public Instruction

Linda McCulloch Superintendent www.opi.mt.gov

What is a Program of Study/Pathway?

1. Incorporate and align secondary and postsecondary education
2. Include academic & CTE content in a coordinated, non-duplicative progression of courses
3. May include the opportunity for secondary students to acquire postsecondary credits
4. Lead to an industry-recognized credential or certificate at the postsecondary level, or an associate or baccalaureate degree;



DEFINITIONS



- A ***Big Sky Pathway***
(aka 'Program of Study')

Is the sequential, non-duplicative coursework necessary for seamless transition from secondary to post-secondary studies for a select set of occupations.

Montana Career Fields Model

Human Services & Resources

→ **Law, Public Safety and Security Cluster**
Pathways: Correction Services, Legal Services, Emergency and Fire Management Services, Security and Protective Services, Law Enforcement Services

→ **Government and Public Administration Cluster**
Pathways: Governance, National Security, Foreign Service, Planning, Revenue and Taxation, Regulation, Public Management and Administration

→ **Human Services Cluster**
Pathways: Consumer Services, Early Childhood Development and Services, Counseling and Mental Health Services, Family and Community Services, Personal Care Services

→ **Education and Training Cluster**
Pathways: Administration and Admin Support, Teaching and Training, Professional Support Services

Agriculture, Food and Natural Resources

→ **Agriculture, Food, & Natural Resources Cluster**
Pathways: Plant Systems, Animal Systems, Power Structural and Technical Systems, Natural Resource Systems, Environmental Service Systems, Agribusiness Systems, Food Products and Processing

Business, Management & Information Systems

→ **Marketing, Sales, and Services Cluster**
Pathways: Management and Entrepreneurship, Professional Sales and Marketing, Buying and Merchandising, Marketing Communications and Promotion, Marketing Info. Mgmt. and Research, Dist. and Logistics, E-Marketing

→ **Business, Management and Admin. Cluster**
Pathways: Management, Business Financial Management and Accounting, Human Resources, Business Analysis, Marketing, Administration and Information Support

→ **Hospitality and Tourism Cluster**
Pathways: Lodging, Travel and Tourism, Recreation Amusement and Attractions, Restaurant and Food/Beverage Services

→ **Finance Cluster**
Pathways: Financial and Investment Planning, Business Financial Management, Insurance Services, Banking and Related Services

→ **Information Technology Cluster**
Pathways: Programming/Software Dev., Network Systems Information and Support Services, Interactive Media

Arts & Communications

→ **Arts, A/V Technology and Communications Cluster**
Pathways: Performing Arts, Audio and Video Technology and Film, Visual Arts, Journalism and Broadcasting, Printing Technology, Telecommunications

Health Sciences

→ **Health Science Cluster**
Pathways: Therapeutic Services, Diagnostic Services, Support Services, Health Informatics, Biotechnology Research and Development

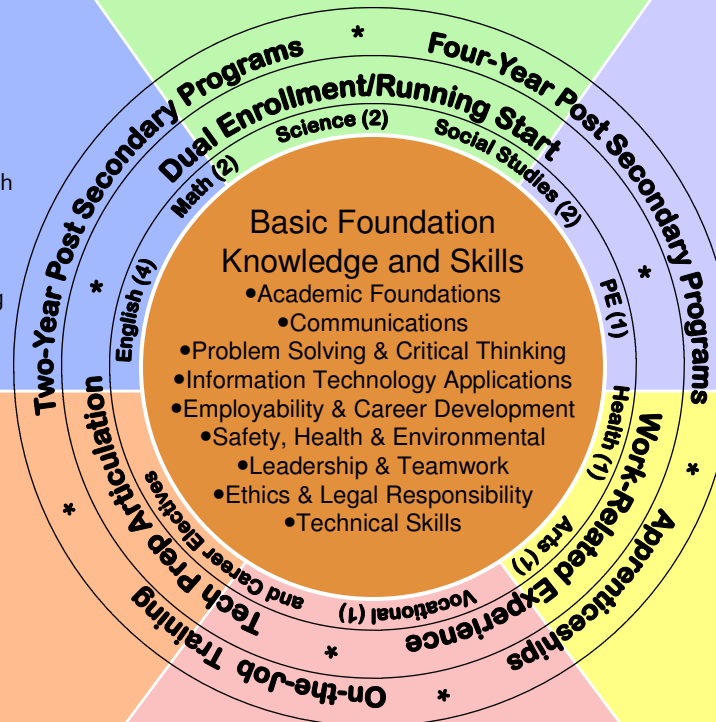
Industrial, Manufacturing & Engineering Systems

→ **Manufacturing Cluster**
Pathways: Production, Health Safety and Environmental Assurance, Manufacturing Production Process Development, Maintenance Installation and Repair, Quality Assurance, Logistics and Inventory Control

→ **Transportation, Distribution & Logistics Cluster**
Pathways: Logistics, Planning and Management Services, Transportation Services, Trans. System Infrastructure, Health Safety and Environmental Mgmt., Facility & Mobile Equipment Maintenance

→ **Architecture and Construction Cluster**
Pathways: Construction, Maintenance Options, Design/Pre-Construction

→ **Science, Technology, Engineering & Mathematics Cluster**
Pathways: Engineering and Technology, Science and Math



Definitions for Big Sky Pathways

The Commissioner's Office of Higher Education (OCHE) and the Office of Public Instruction (OPI) recommend these definitions to be used in Big Sky Pathways development statewide.

Career Field: Six Career Fields make up the broad organizing structure that Montana has chosen to portray this initiative in our state.

As seen on the model, the Career Fields are shown as

Health Sciences

Business Management and Information Systems

Human Services and Resources

Industrial, Manufacturing and Engineering Systems

Agriculture, Food, and Natural Resources

Arts and Communications

Career Clusters: An organizing framework defining Career and Technical Education using the 16 clusters of occupations and related pathways with validated standards that ensure opportunities for all students regardless of their career goals and interests.

Big Sky Pathway (Program of Study): A tool to organize a coherent, articulated sequence of rigorous academic and career courses leading to an industry recognized certificate or licensure, and/or a post-secondary degree and beyond.

20-9-706. Running start program -- authorizing class credits at postsecondary institution -- eligibility -- payment for credits. (1) As used in this section, "postsecondary institution" means a unit of the Montana university system, a public community college, or a tribal college.

(2) A school district may enter into an interlocal agreement pursuant to Title 7, chapter 11, with a postsecondary institution to institute a "running start" program to allow 11th and 12th grade students, as defined by the district, to attend classes at the postsecondary institution at a cost determined by the interlocal agreement and to obtain credits in classes not available through the school district.

(3) An agreement entered into by the district and the postsecondary institution must state the amount for each credit to be paid to the postsecondary institution by the district or the student.

(4) To participate in the program, a student shall complete a running start application provided by the district. The district shall determine whether the student has the skills needed to succeed in the proposed college coursework. If accepted, a student may earn both high school and college credits as determined by the interlocal agreement.

(5) In registering 11th and 12th grade students in the program, a postsecondary institution may not displace adult students attending the postsecondary institution.

(6) If accepted into the program, the student is responsible for transportation, books, and all supplies.

(7) If a student accepted into the program drops out of a class or classes at the postsecondary institution during the drop period established by the postsecondary institution, the postsecondary institution shall reimburse the district or the student the cost associated with the student's credits as determined by the interlocal agreement.

History: En. Sec. 1, Ch. 377, L. 2001.



Montana Office of Public Instruction

Linda McCulloch Superintendent www.opi.mt.gov



Cluster Overview:

Business Management and Administration careers encompass planning, organizing, directing and evaluating business functions essential to efficient and productive business operations. Business Management and Administration career opportunities are available in every sector of the economy.

Pathway Options:

- Administrative Support
- Business Information Management
- General Management
- Human Resources Management
- Operations Management

Occupation Examples:

Human resources manager, Administrative Assistant, Information Systems Manager, Management analyst, Marketing manager, Receptionist, Interviewer

For a complete listing, go to:
<http://online.onetcenter.org/find/career?c=4&q=Go>

SUGGESTED HIGH SCHOOL COURSES

Based on State Graduation Requirements and Montana College Admissions Criteria: <http://mus.edu/admissions.asp>
 For more information, talk to your school counselor

| | | | |
|------------------|--|--|---|
| 9 th | Graduation Requirements 2-Year College Prep | English, Math, Earth Science (lab science), Health Enhancement | Cluster Foundation Courses: Information Technology Introduction to Business Pathway Courses: Accounting I, II Business Finance Entrepreneurship Integrated Software Office Procedures Student Organization(s): BPA DECA |
| | 4-Year MT College/Univ Prep (Rigorous Core) | English, Algebra I, Earth (lab) Science, Health Enhancement and 3 years of the following: World Language/Computer Science/Visual or Performing Arts/Career & Tech Ed | |
| | <i>Career-Related Electives</i> | <i>Cluster Foundation Courses</i> | |
| 10 th | Graduation Requirements 2-Year College Prep | English, Math, Biology (lab science), Global Studies | |
| | 4-Year MT College/Univ Prep (Rigorous Core) | English, Geometry, Biology, Global Studies, and 3 years of the following: World Language/Computer Science/Visual or Performing Arts/Career & Tech Ed | |
| | <i>Career-Related Electives</i> | <i>Cluster/Pathway Courses</i> | |
| 11 th | Graduation Requirements 2-Year College Prep | English, U.S. History, Visual/Performing Arts | |
| | 4-Year MT College/Univ Prep (Rigorous Core) | English, U.S. History, Algebra II, Chemistry or Physics and 3 years of the following: World Language/Computer Science/Visual or Performing Arts/Career & Tech Ed | |
| | <i>Career-Related Electives</i> | <i>Pathway Courses</i> | |
| 12 th | Graduation Requirements 2-Year College Prep | English, Government | |
| | 4-Year MT College/Univ Prep (Rigorous Core) | English, Government, Social Studies, College Prep Writing, (additional math encouraged), and 3 years of the following: World Language/Computer Science/ Visual or Performing Arts/Career & Tech Ed | |
| | <i>Career-Related Electives</i> | <i>Pathway Courses</i> | |

ADVANCED LEARNING OPPORTUNITIES

High School to College/Career Linkages

Tech Prep courses:

Advanced Placement courses:

Running Start opportunities:

Work-based Learning:

On-line Learning:

MONTANA POSTSECONDARY OPPORTUNITIES

Montana University System Degree and Program Inventory: <http://www.homepage.montana.edu/~mus/drqinw/>
Your Guide to Montana's Certificate and Associate Degree Programs: <http://mus.edu/twoyear/YourGuide.html>

| | | | | |
|---|---|---|---|---|
| Colleges of Technology: BLCOT—Billings; GFCOT—Great Falls; HCOT—Helena; TECHCOT—Butte; UMCOT—Missoula | | Community Colleges: DCC—Glendive; FVCC—Kalispell; MCC—Miles City | Tribal Colleges: BFCC—Browning; CDKC—Lame Deer; FBCC—Harlem; FPCC—Poplar; LBHC—Crow Agency; SCC—Box Elder; SKC—Pablo | Four Year Colleges/Universities: MSU—Bozeman; MSUB—Billings; MSUN—Heavre; TECH—Butte; UM—Missoula; UMW—Dillon |
| MILITARY | <ul style="list-style-type: none"> Requires diploma or GED 17 with parental consent; 18 without | Air Force, Air Guard, Army, Coast Guard, Navy For more information: http://todaysmilitary.com | | |
| PROFESSIONAL CERTIFICATE | <ul style="list-style-type: none"> Requires diploma or GED Less than 30 credits; little/no general ed credits Complete in one year or less | Medical Receptionist—DCC | | |
| APPRENTICESHIP | <ul style="list-style-type: none"> Requires diploma or GED Must be at least 18 Minimum 2,000 hours of supervised experience | See the MT Dept of Labor website for more information: http://wsd.dli.mt.gov/apprenticeship/default.asp | | |
| CERTIFICATE OF APPLIED SCIENCE | <ul style="list-style-type: none"> Requires diploma or GED 30-45 credits; limited general education credits Complete in one year or less | Office Assistant—BLCOT, TECHCOT, HCOT Office Support—GFCOT | | |
| ASSOCIATE'S OF APPLIED SCIENCE DEGREE | <ul style="list-style-type: none"> Requires diploma or GED 60-72 credits; includes 15-25 general ed credits Complete in two years (if prepared academically in math and English) | Administrative Assistant—BLCOT, FVCC Business Administration—UMW Business Management/ Entrepreneurship—GFCOT Business Technology—DCC Call Center Management—FVCC Executive/Legal Administrative Assistant—FVCC Human Resources Management—UMW, FVCC Office Admin & Technology—GFCOT Office Assistant—TECHCOT Small Business Entrepreneurship Tech—HCOT | | |
| BACCALAUREATE DEGREE | <ul style="list-style-type: none"> Requires 4-year college prep for admission 128 credits (approximately) Complete in four years | Agribusiness—MSU Business Administration—MSUB, MSU, UM, UMW, MSUN Business/Entrepreneurship—SKC Business & Information Tech—TECH | | |

High school freshman

| Subject | Course Title | Term | Grade | Teacher | Comments |
|----------------------|---------------|-----------|-------|----------|----------|
| Career and Technical | Welding 1 | Full year | B | Allen | |
| English | English 1 | Full year | B | Kelly | |
| Health and PE | PE | Full year | B | Olsen | |
| Mathematics | Algebra 1 | Full year | B | Murphy | |
| Other | Band | Full year | B | Garnass | |
| Science | Earth Science | Full year | B | McCauley | |
| Second Languages | Spanish | Full year | B | Foster | |

High school sophomore

| Subject | Course Title | Term | Grade | Teacher | Comments |
|----------------|---------------|-----------|-------|-----------|----------|
| Arts | Drawing | Full year | B | Dawson | |
| English | English II | Full year | B | Kelly | |
| Health and PE | PE | Full year | B | Olsen | |
| Mathematics | Geometry | Full year | B | McCarvel | |
| Other | Band | Full year | B | Garnass | |
| Science | Biology | Full year | B | McCauley | |
| Social Science | World History | Full year | B | Hohenthal | |

High school junior

| Subject | Course Title | Term | Grade | Teacher | Comments |
|----------------------|--------------|-----------|-------|-----------|----------|
| Career and Technical | Welding II | Full year | B | Allen | |
| English | English III | Full year | B | Foster | |
| Mathematics | Algebra II | Full year | B | Novak | |
| Other | Band | Full year | B | Garnass | |
| Science | Chemistry | Full year | B | Telling | |
| Second Languages | Spanish | Full year | B | Foster | |
| Social Science | US History | Full year | B | Hohenthal | |

High school senior

| Subject | Course Title | Term | Grade | Teacher | Comments |
|----------------------|--------------|-----------|-------|---------|----------|
| Career and Technical | CADD | Full year | B | Allen | |

| | | | | | |
|-------------|----------------|-----------|---|---------|--|
| English | Senior English | Full year | B | Hesford | |
| Government | Governemmt | Full year | B | Bieler | |
| Mathematics | Calculus | Full year | B | Murphy | |
| Other | Aide | Full year | B | Telling | |
| Other | Conditioning | Full year | B | Ternes | |

College freshman

| Subject | Course Title | Term | Grade | Teacher | Comments |
|----------------------|------------------|--------|-------|---------|----------|
| Career and Technical | CADD 110 | Fall | | | |
| Career and Technical | CADD 145 | Spring | | | |
| Career and Technical | Welding 120 | Fall | | | |
| Career and Technical | Welding 135 | Spring | | | |
| English | English 101 | Fall | | | |
| English | English Comp 120 | Spring | | | |
| Government | Pol Sci 105 | Spring | | | |
| History | Wester Civ 125 | Spring | | | |
| Mathematics | Math 101 | Fall | | | |
| Science | Bio 101 | Fall | | | |
| Science | Bio 120 | Spring | | | |
| Science | Bio Lab 150 | Spring | | | |

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End Printing for T. J. Eyer

5. **Individualized Program of Study:** The next step would be customizing the plan for the individual student. Using the recommended Big Sky Pathway, students can develop their own plan of study and complete the semi-blank template. Whenever possible, the secondary required courses and postsecondary courses would automatically fill in. This plan would be saved in the student's MCIS portfolio. The following is an example of a completed individualized plan of study.

| Student Name: John X. Student Education Option: AAS in Construction Technology – Carpentry High School: Helena High School College: UM-Helena COT | | | | | | | | | | |
|--|--------------|--------------------------|--------------------------------------|--------------------------|---------------------------------------|------------------------------------|----------------------|--|--------------------------------------|---|
| Helena High School | Grade | English (4 credits) | Math (2 credits) | Science (2 credits) | Social Studies (3 credits) | Health (.5 credit) PE (1.5 credit) | Fine Arts (1 credit) | Career and Technical Education (1 credit) | Other (6 credits) | Student organization(s) and workbased learning: |
| HIGH SCHOOL DIPLOMA | 9 | English 1 | Algebra | Earth Science | World Cultures | Frosh HP | | Basic Tech AND Computer Skills for Life | | Skills USA Art Club Football |
| | 10 | English 2 | Geometry | Biology | | Soph HP/Health | | | Carpentry 1 (2 credits) Welding 1 | Summer employment with carpentry company |
| | 11 | English 3 | | | US History | | Intro to Art | | Carpentry 2 (2 credits) | |
| | 12 | English 4 | MAT112T Technical Math for Carpentry | | Govt | | Advanced Art | | Welding 2 | |
| UM-Helena College of Tech | | English | Math | Business or Office Tech | Human Relations | Welding | | | Construction | |
| CERTIFICATE (2 SEMESTERS) | Year 1 Sem 1 | | MAT112T Technical Math for Carpentry | OT112 Intro to Computers | | | | CSTR103 Occupational Related Safety and Tool Usage CSTR120 Rough Framing - Floors, Walls, Trusses, and Rafters CSTR125 Construction Building Lab 1 CSTR145 Drafting, Blueprint Reading, and House Development CSTR131 Windows, Doors, and Exterior Finishing 3 CSTR135 Insulation and Energy Building Practices 1 CSTR150 Roofing Applications 3 CSTR160 Drywall Application and Finishing 3 CSTR165 Cabinet Installation, Interior Finish, and Painting 3 CSTR171 Construction Building Lab II | | |
| | Year 1 Sem 2 | ENG107T Technical Commun | | | | | | CSTR200 Light Equipment and Rigging 2 CSTR205 Computer Aided Design 2 CSTR216 Advanced Structural Lab I 5 CSTR260 Advanced Framing Systems | | |
| A.S. DEGREE (4 SEMESTERS) | Year 2 Sem 1 | | | BUS105 Intro to Business | HR110T Career Dev and Human Relations | | | CSTR218 Site Prep, Foundations and Industrial Concrete CSTR220 Construction Project Management CSTR225 Decks and Patios CSTR226 Advanced Structural Lab II CSTR230 Cabinet Making CSTR250 Construction Estimating | | |
| | Year 2 Sem 2 | | | | | WELD100 Welding Fund | | | | |

Legend: Required High School Course High School Elective Tech Prep Course Dual Credit Course College Course On-line Course

What are Big Sky Pathways?



- Provides the relevance students demand.
- Groupings of occupations and industries.
- A framework that shows the entire world of work.
- Used as an organizing tool for curriculum design.
- Blend rigorous academic/technical preparation.

What are Big Sky Pathways?



- Provide career planning
- Offer options for students to experience all aspects of an industry.
- Assists students with transitions

All clusters have a common foundation knowledge and skills base.

Why are we implementing them?

- Remediation Rates
- Dropout Rates
- Secondary and Postsecondary Disconnect
- Wasted Senior Year
- Postsecondary Persistence
- Employer Dissatisfaction



Why are we implementing them?

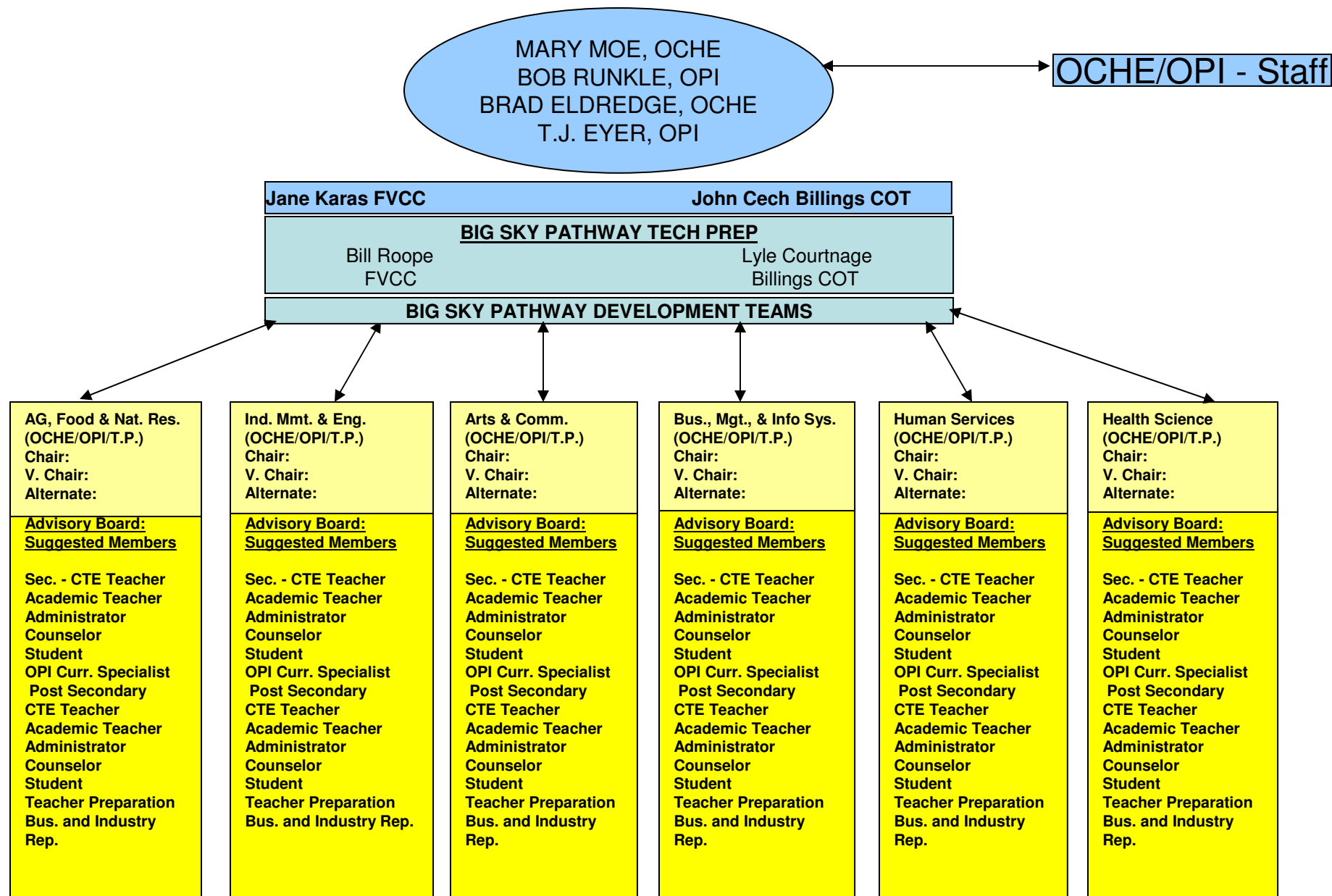
- They complained that school didn't reflect real-world challenges.
- More than half said their major reason for dropping out was their feeling that classes were uninteresting or irrelevant.
- Some dropped out because they were doing poorly in school.
- Considering that only 30 percent of U.S. high school students test at the "proficient" level in reading, it shouldn't be surprising that they struggle with increasingly challenging coursework.

Who'll develop the model Pathways?



- Specialists from OCHE
- Specialists from OPI
- Members of Big Sky Pathway Consortium---
formerly the Tech Prep
- Educators (Secondary & Post-Secondary) from
each Cluster area
- Business & Industry partners

MONTANA STATE EXECUTIVE LEADERSHIP TEAM (SELT)



THE NEXT 6 MONTHS ...



Pathways Published on Web Site – Feb. 15th, 2009

Regional Trainings – March/April 2009

- Helena – Feb. 25th
- FVCC/Kalispell – March 5th
- UM Western/Dillon – March 12th
- MCC/Miles City – March 17th
- Grant Hotel Big/Timber – March 24th
- Cottonwood Inn/Glasgow – March 31st
- Duck Inn/Havre – April 1st

Summer Professional Development to integrate Pathways and MCIS System.

CONCLUSION



- Please contact me if you'd be interested in serving on the

Pathway Development Team

CONTACT INFORMATION

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